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IS 10519 (1983): Diamond Abrasive Circular Segmental Saws
[PGD 9: Abrasives]

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IS : 10519 - 1983

Indian Standard

(Reaffirmed 1998)

SPECIFICATION FOR DIAMOND ABRASIVE CIRCULAR SEGMENTAL SAWS

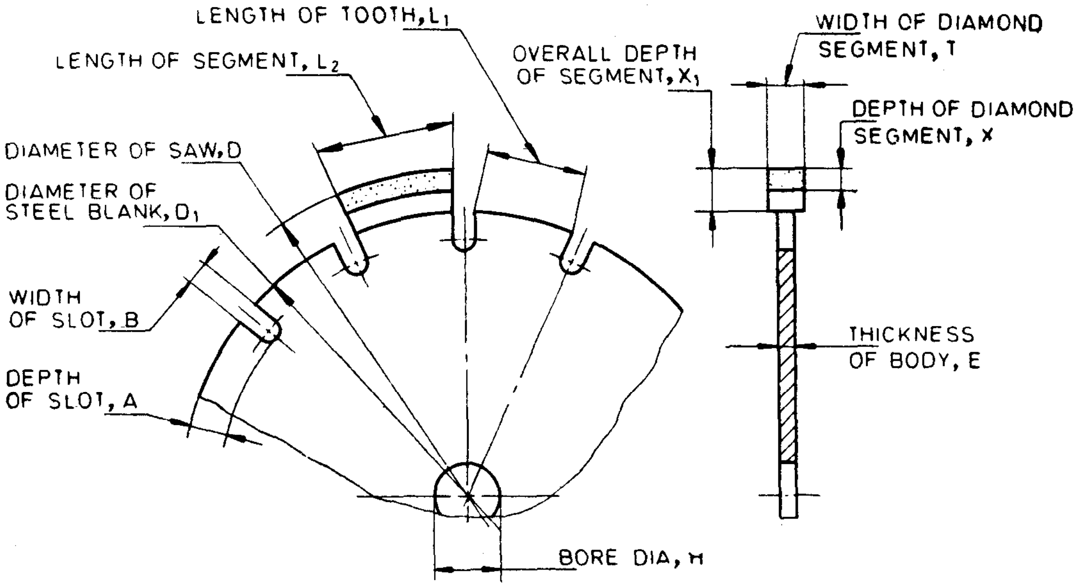
1. Scope — Covers the dimensions and other requirements for diamond abrasive circular segmental saws.

2. Types

Type A — Circular segmental saw with narrow slot

Type B — Circular segmental saw with wide slot

3. Terminology — Shall be as given below:



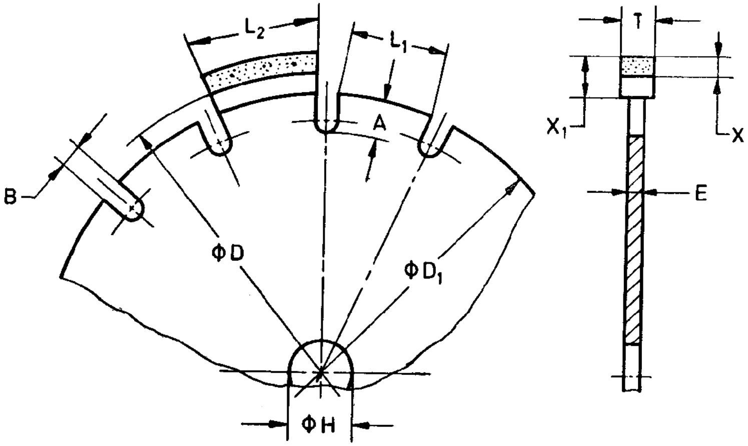
Abrasives Sectional Committee, EDC 13; Industrial Diamond and Super Abrasives Subcommittee, EDC 13 4 : [Ref : Doc : EDC 13 (3534)]

Adopted 12 March 1983 © December 1983, ISI Gr 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

4. Dimensions

4.1 *Type A Diamond Abrasive Circular Segmental Saws with Narrow Slot*

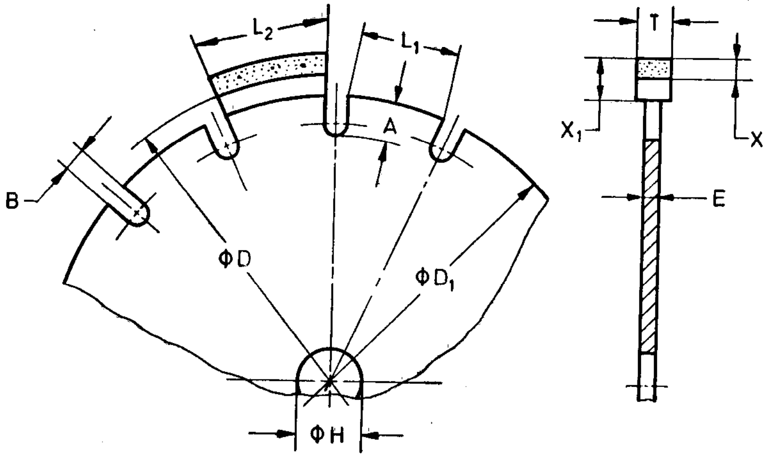


All dimensions in millimetres.

D ≃	D_1	Tolerance on D_1	E	Tolerance on E	Number of Teeth	A ±0·5	B ±0·5	L_1	H H7	L_2		T	X
										Min	*Max*		
200	190	±0·3	1·2	±0·05	16	12	3	34·3	16	34·8	36·3	2·0	5
250	240		1·6		21	12	3	32·9	16	33·4	34·9	2·4	5
300	290		1·8	±0·07	21	14	3	40·4	22	40·9	42·4	2·8	5
350	340		2·2		25	14	3	39·7	60	40·2	41·7	3·2	5
400	390		2·5		28	14	3	40·7	60	41·2	42·7	3·8	5
450	440	±0·5	2·8	±0·1	32	14	3	40·2	60	40·7	42·2	4·0	5
500	490		2·8, 3·2		36	14	3	39·7	60	40·2	41·7	4·0	5
550	540		3·5		40	14	3	39·4	60	39·9	41·4	4·5	5
600	590		3·5		42	14	3	41·2	60, 100	41·7	43·2	4·5	5
700	690	±0·7	4·0		50	14	3	40·4	60, 100	40·9	42·4	5·0	5
800	790		4·5		57	14	3	40·5	60, 100	41·0	42·5	5·5	5·5

Note — The overall depth of segment X_1 shall be as agreed between the manufacturer and the purchaser.

4.2 *Type B Diamond Abrasive Circular Segmental Saws with Wide Slot*



All dimensions in millimetres.

D ≃	D_1	Tolerance on D_1	*E*	Tolerance on *E*	Number of Teeth	*A* ±0·5	*B* ±0·5	L_1	*H* H7	L_2		*T*	*X*
										Min	*Max*		
200	190	±0·3	1·2	±0·05	15	12	6	33·8	16	34·3	35·8	2·0	5
250	240		1·6		18	12	8	33·9	16	34·4	35·9	2·4	5
300	290		1·8	±0·07	18	14	10	40·6	22	41·1	42·6	2·8	5
350	340		2·2		21	14	10	40·8	60	41·3	42·8	3·2	5
400	390		2·5		24	14	10	41·1	60	41·6	43·1	3·8	5
450	440	±0·5	2·8	±0·1	26	14	12	41·2	60	41·7	43·2	4·0	5
500	490		2·8		30	14	10	41·2	60	41·7	43·2	4·0	5
500	490		3·2		30	14	10	41·2	60	41·7	43·2	4·0	5
550	540		3·5		32	14	12	41·1	60	41·6	43·1	4·5	5
600	590		3·5		36	14	10	41·5	60, 100	42·0	43·5	4·5	5
700	690	±0·7	4·0		40	14	12	42·2	60, 100	42·7	44·2	5·0	5
800	790		4·5		46	14	12	41·9	60, 100	42·4	43·9	5·5	5·5
900	884		5·0		64	18	18	25·3	100	25·8	27·3	6·5	5·5
1 000	984		5·0		70	18	20	24·1	100	24·6	26·1	6·5	6·5
1 200	1 184	±1·0	5·5	±0·25	80	18	22	24·5	100	25·0	26·5	7·0	6·5
1 350	1 332		6·0		88	18	22	25·6	120	26·1	27·6	7·5	6·5
1 500	1 482		7·0		100	18	22	24·6	120	25·1	26·6	8·5	6·5
1 600	1 582		7·0		108	18	22	24·0	150	24·5	26·0	8·5	6·5
1 800	1 782		7·0		120	18	22	24·6	150	25·1	26·6	8·5	6·5
2 000	1 982		8·0		132	18	22	25·2	150	25·7	27·2	10·5	7·5
2 500	2 482	±2·0	9·0		140	22	30	25·7	150	26·2	27·7	12·0	7·5
3 000	2 982		12·0		160	22	30	28·7	150	29·2	30·7	15·0	8·0

Note — The overall depth of segment X_1 shall be as agreed between the manufacturer and the purchaser.

5. Recommended Speed and Run Out

5.1 Recommended peripheral speeds for working with different materials are given below:

Material	*Peripheral Speed* m/s
Granite with high quartz content	25 - 30
Granite with low quartz content	30 - 40
Marble	40 - 50
Sand stone	40 - 65

5.2 Tolerance limits for radial run out and side run out shall be as given below:

Diameter of Saw mm	Radial Run Out mm	Side Run Out mm
200	0·15	0·12
250	0·15	0·15
300	0·15	0·15
350	0·15	0·15
400	0·15	0·15
450	0·20	0·20
500	0·20	0·20
550	0·20	0·25
600	0·20	0·30
700	0·20	0·32
800	0·20	0·40
900	0·20	0·45
1 000	0·20	0·50
1 200	0·20	0·60
1 350	0·25	0·65
1 400	0·25	0·70
1 500	0·25	0·75
1 600	0·25	0·80
1 800	0·25	0·90
2 000	0·25	1·00
2 500	0·25	1·25
3 000	0·25	1·5

6. Material

6.1 *Body* — Steel of tensile strength not less than 700 MPa (1 MPa = 0·1 kgf/mm^2 approx).

6.2 *Segment* — Diamond powder.

7. Hardness — Body shall have a hardness of 450 HV *Min.*

8. Designation — A diamond abrasive circular segmental saw of Type A having outer diameter $D = 350$ mm, bore diameter $H = 60$ mm and width of segmental $T = 3·2$ mm for sawing stone conforming to this standard, shall be designated as:

Diamond Saw A 350 × 60 × 3·2 IS : 10519 Stone.

9. Marking — The saws shall be marked with the designation, material to be sawed, the direction of rotation, manufacturer's name, initials or trade-mark, and year of manufacture.

9.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

10. Packing — The saws shall be suitably packed to avoid damages during handling and transportation.

EXPLANATORY NOTE

The diamond abrasive circular segmental saws are used for cutting stone, concrete, marble, granite and ceramic. The tip brazed on the segmental saws has fine diamond particles bonded together with metal matrix.

This specification has been prepared on the basis of the current practices followed in the country.

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